

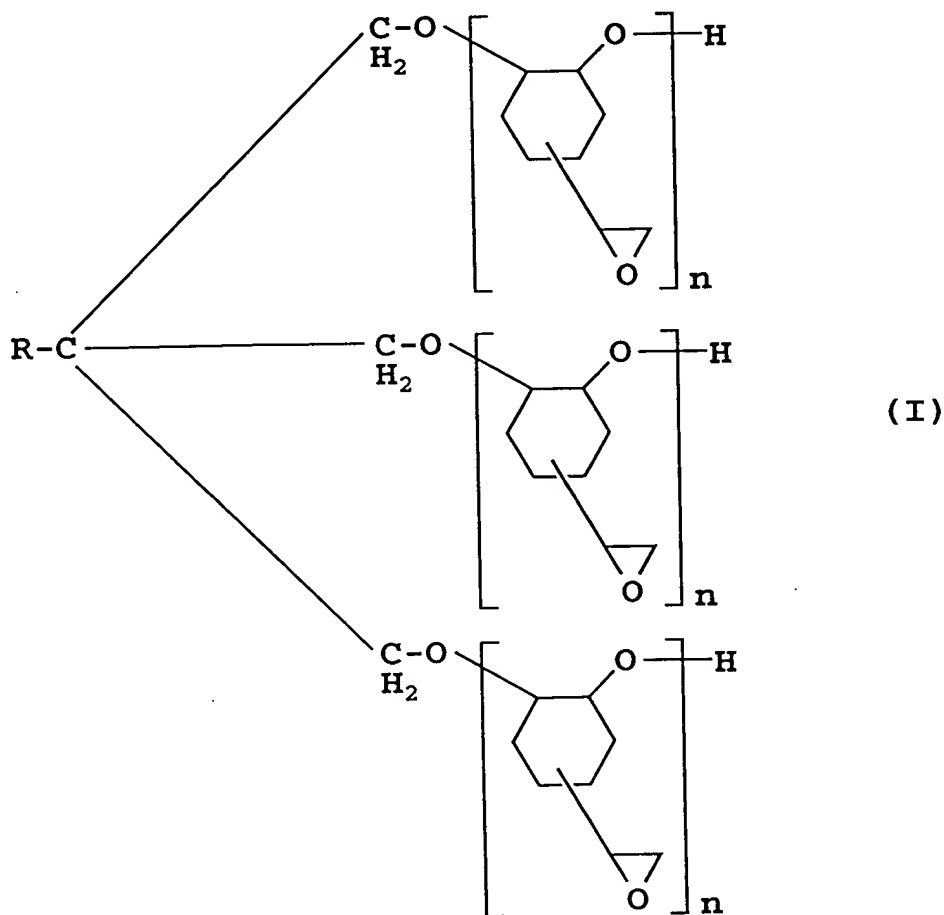
LISTING OF THE CLAIMS:

Claims 1-8 (cancelled).

Claim 9 (currently amended): A method for producing a multi-mode optical waveguide comprised of at least one core and a cladding having a refractive index which is lower than that of the at least one core, the method comprising the steps of:

forming an under cladding layer onto a substrate;

preparing a mixture containing a reactive oligomer having general formula (I) and a photopolymerization initiator by blending, and controlling viscosity of the mixture to provide a mixture having a viscosity [mixture] ranging from 500 cps to 10,000 cps by blending the reactive oligomer in an amount ranging from 10 to 50 wt %,



where R is C_mX_{2m+1} , where m is a natural number, X is one of a hydrogen atom, a heavy hydrogen atom, or a halogen group, and n is a natural number;

forming on the under cladding layer a layer of the mixture by spin coating [at about 1000 rpm];

irradiating the layer of the mixture having a viscosity ranging from 500 cps to 10,000 cps either with light through a mask or directly with condensed light, to form a latent image in pattern form which includes irradiated areas and non-irradiated areas;

removing the layer of the mixture in the non-irradiated areas with a solvent to form a pattern, for use as a core portion, for passage of light; and

forming an upper cladding layer on the core portion and an upper portion in the surroundings thereof.

Claim 10 (cancelled).

ne Claim 11 (previously amended): The method according to claim 13, wherein the reactive oligomer having general formula (I) has a value for n which is five.

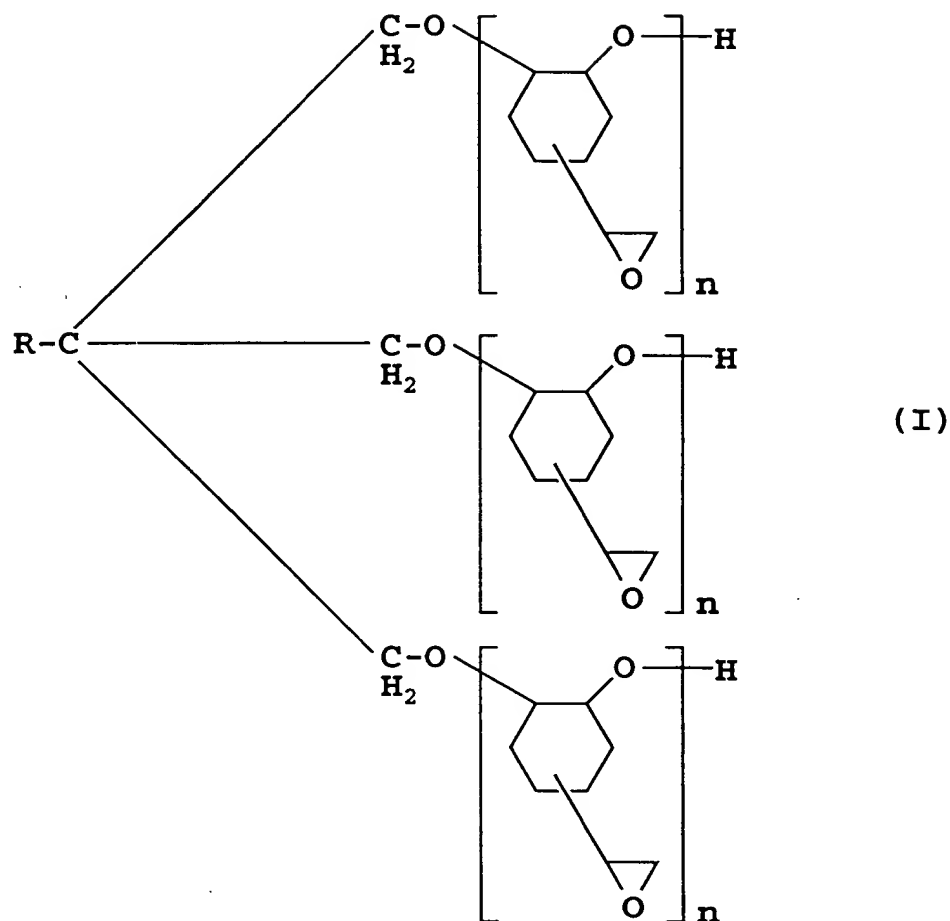
Claim 12 (new): The method according to claim 9, wherein spin coating is carried out at about 1000 rpm.

Claim 13 (new): A method for producing a multi-mode optical waveguide comprised of at least one core and a cladding having a refractive index which is lower than that of the at least one core, the method comprising the steps of:

forming an under cladding layer onto a substrate;

preparing a mixture containing a reactive oligomer having general formula (I) and a photopolymerization initiator by blending respective amounts thereof and controlling viscosity of

the mixture to a viscosity range of from 500 cps to 10,000 cps by varying the amount of the reactive oligomer in a range of from 10 to 50 wt %;



where R is C_mX_{2m+1} , where m is a natural number, X is one of a hydrogen atom, a heavy hydrogen atom, or a halogen group, and n is a natural number;

forming on the under cladding layer a layer of the mixture by spin coating;

irradiating the layer of the mixture while the layer is in liquid form and has a viscosity ranging from 500 cps to 10,000 cps, either with light through a mask or directly with condensed

light, to form a latent image in pattern form which includes photocured irradiated areas and non-irradiated areas;

removing the layer of the mixture in the non-irradiated areas with a solvent to form a pattern, for use as a core portion, for passage of light; and

forming an upper cladding layer on the core portion and an upper portion in the surroundings thereof.

D2
cont. Claim 14 (new): The method according to claim 13, wherein the reactive oligomer having general formula (I) has a value for n which is five.

Claim 15 (new): The method according to claim 13, wherein spin coating is carried out at about 1000 rpm.